

PHD PROGRAM IN "ENGINEERING FOR ENERGY AND ENVIRONMENT"			
Department	Dipartimento di Economia e Impresa (DEIM)		
Partner Institutions	None		
Program duration	3 years: 1st November 2017 – 31st October 2020 Thesis Defence: within April 2021		
Program objectives	<p>The PhD program in Engineering for Energy and Environment aims to provide a high level of training to a select number of young graduates to make them competitive on a national and international level in private companies with high technological contents, research centers and universities. The main objective of the program is to provide an interdisciplinary view of engineering problems in the energy and environment scientific areas, characterized by a high technological development. The research activities will be devoted to the study of new engineering solutions, novel processing techniques and innovative research methodologies, with a focus on their technology transfer. Students will be engaged in training activities and scientific research in the program subjects, with particular reference to technologies for thermonuclear fusion, energy conversion processes, energy storage, environmental issues, innovations in the fields of mechanical engineering, also in agriculture, and of sensors, biosystems and agricultural issues, with regard to primary production and environmental aspects. The work of the PhD students will be coordinated by the members of the board already active in national and international industrial collaborations and research projects, in innovative and relevant topics, such as hydrogen technologies, renewable energy, biomass, biosystems and thermonuclear fusion.</p>		
No. of positions	Total places	12	
	Places with scholarships	7	Of which two are reserved for foreign students
	Reserved for Research Center Employees (CREA-IT)	2	
	Places without scholarships	2	
Curricula (In the application form the candidate must specify the curriculum of interest)	<p>Curriculum "Energy and engineering systems" n.5 places with scholarship (of which two are reserved for foreign students) and n. 2 places without scholarship</p> <p>Curriculum "Biosystems and environment" n. 2 place with scholarship and n. 1 place without scholarship, n. 2 places reserved for Research Center Employees (CREA-IT)</p>		
Places with scholarship	<p>Curriculum "Energy and engineering systems"</p> <ul style="list-style-type: none"> - n. 1 scholarship co-founded by DEIM and University of Tuscia <i>Topic:</i> Analysis of alternative energy systems through numerical modelling and dynamic optimization - n. 1 scholarship co-founded by CIRDER and University of Tuscia <i>Topic:</i> Numerical modeling and multiphysic simulation of renewable energetic processes and technologies - n. 1 scholarship co-founded by Walter Tosto s.p.a and University of Tuscia <i>Topic:</i> Metallurgical and mechanical characterisation of joints relevant for Nuclear Fusion plasma facing components - n. 1 scholarship co-founded by DEIM and University of Tuscia (reserved to foreign students) <i>Topic:</i> Studies of divertor magnetic advanced configurations and control systems for fusion energy experiments - n. 1 scholarship founded by University of Tuscia (reserved to students) 		

	<p>graduated in USA) <i>Topic:</i> Advanced methods for environmental monitoring</p> <p>Curriculum “Biosystems and environment” - n. 1 scholarship funded by CREA-IT the University of Tuscia <i>Topic:</i> Innovative energy systems study through numerical modeling and optimization methods - n. 1 scholarship funded by the University of Tuscia <i>Topic:</i> Diagnostic systems for machines and equipment based on the use of thermal, acoustic and vibration sensors</p> <p>- 2 places reserved for research staff (CREA-IT) <i>Topics:</i> 1. Biomass energy transformation in small power plants (micro generation) and their implant and environmental problems (control of pollutants in gaseous effluents at the chimney) 2. Methodologies and engineering technologies for cereal processing and quality analysis</p>
Places without scholarships	<p>Curriculum “Energy and engineering systems” - n. 1 place <i>Topic:</i> Using big-data for energy and biosystems - n. 1 place <i>Topic:</i> Sustainable development of conventional and renewable energy sources</p> <p>Curriculum "Biosystems and environment" - n. 1 place <i>Topic:</i> Innovative methodologies for collecting and processing spatial data in order to mitigate the hydrogeological risk</p>
	<p>Application to the public competition is open to all, regardless of age and citizenship, who, by the date this call expires, possess one of the qualifications listed below: - an Italian “laurea specialistica” degree, obtained according to the Ministerial Decree n. 509/1999; - an Italian “laurea magistrale” degree, obtained according to the Ministerial Decree n. 270/2004; - an Italian equivalent university degree obtained under the Italian regulations previously in force, the time-span of which being no less than 5 years; - a foreign university degree equivalent to those mentioned above.</p>
Admission requirements	<p>Admission is also open to university students who will finish their MS degree by October, 31th, 2017. In such cases admission will be “conditional”; the applicants will send by mail (capuani@unitus.it) or hand out to the “Ufficio Offerta Formativa” a self-certification of the relative degree (a certification in case of Non-EU students). Self-certification (or certification in case of Non-EU students) should state the name of the awarding University, award date, grade and type of qualification (“vecchio ordinamento”, “Specialistica”/“magistrale”) and a copy of a valid identity document. Applicants not in possess of the admission requirements must indicate the date by which they expect to obtain the qualification required.</p>
Evaluation of candidates (Maximum score: 80 out of 80)	<p>Evaluation of academic qualification and oral examination Assessment of the English Language Knowledge. Language for the examination: Italian or English The evaluation of qualifications is preliminary to the oral exam. The score obtained by candidates after the evaluation of their qualifications will be added to the score of the oral examination. The results will be published on the Tuscia University web site (www.unitus.it) at the section of “Didattica”- >“Dottorati di Ricerca” Together with the application form, candidates should submit a research project, within the themes of Ph.D., up to a maximum of 5 pages, which must</p>

	be written in Italian or English. The research project will be discussed during the oral exam.
Evaluation of academic qualification (Maximum score: 20 out of 80)	<p>Master's thesis: max 5 points</p> <p>University career (exams taken with the relative grades and final grade): max 4 points</p> <p>Scientific publications relating to the areas of Ph.D.: max 2 points</p> <p>Research and/or study activities in foreign institutions: max 2 points</p> <p>Professional experiences and other qualifications that each candidate considers useful: max 4 points</p> <p>Research project submitted by the candidate: max 5 points</p> <p>Before of the oral exam, the evaluation of academic qualification results will be published on the Tuscia web site www.unitus.it (section "Didattica" > "Dottorati di Ricerca").</p>
Evaluation of the oral exam (Maximum score: 60 out of 80)	<p>Oral exam: maximum score 60 out of 80 points</p> <p>The minimum score for a positive oral exam will be at least 40 out of 80 points.</p> <p>The foreign language subject to verification will be English.</p>
Topics of the oral examination	The oral test, aimed at ascertaining the candidate aptitude for scientific research, will focus on the discussion of issues related to the PhD program topics and the research project presented by the candidate. The oral exam will include a verification of the English language knowledge based on reading and translation of sections of a scientific text.
Exam dates and locations	The exam will be held in the period between from September, 15 to October 14, 2017. The schedule will be published in the university website within the page "Didattica"->"Dottorati di Ricerca" not later than the thirtieth day before the date of completion of the oral examination.
Contact to information	<p>Contacts of the course:</p> <p>Prof. Danilo Monarca e-mail: monarca@unitus.it</p> <p>Prof. Stefano Ubertini e-mail: stefano.ubertini@unitus.it</p>